said antenna elements being disposed relative to a center axis so as to radiate from the respective element beginnings to the respective element ends to allow a radially directed current to flow in each antenna element between the element end thereof and the element beginning thereof, and exhibiting cyclical symmetry from antenna element to antenna element;

the respective antenna elements being linear and three-dimensionally straight to define respective line directions, said line directions intersecting said center axis at a common point outside of said element beginning plane and outside of said element end plane; and

said antenna elements being at least magnetically coupled with each other in said antenna.

15. (New) A nuclear magnetic resonance antenna as claimed in claim 14 herein the respective element beginnings are electrically connected to each other via a first ring-shaped connecting element and wherein the respective element ends are electrically connected to each other via a second ring-shaped connecting element.

16. (New) A nuclear magnetic resonance antenna as claimed in claim 14 wherein said plurality is divisible by four.

REMARKS

In the office action dated July 14, 2003, a new ground of rejection was raised for claims 1-10. Claims 1-10 were rejected under 35 USC Section 102(b) as being anticipated by Srinivasan, et al. Since the Examiner also included claim 13 within the same detailed substantiation as claims 1-10, Applicants assume the Examiner intended to state that claims 1-10 and 13 are anticipated by Srinivasan, et al. Claims 11 and 12 were rejected under 35 USC Section 103(a) as being unpatentable over Srinivasan, et al.

Applicants note with appreciation the telephone interview courteously afforded the undersigned counsel for the Applicants on October 7, 2003. In that telephone interview, Applicants proposed to amend the claims to specifically claim the planar embodiments shown in Figures 1-6, and to separately and specifically claim the bi-planar embodiment shown Figure 7. Despite the fact that this is the first time

throughout the extensive prosecution of this application that the Srinivasan, et al. reference has been cited, and Applicants therefore have not previously had an opportunity to respond in any way to the Examiner's comments regarding the teachings of that reference, the Examiner stated that amending the claims in this manner most likely would be considered as raising a new issue, and therefore such an amendment most likely would not be entered in the "after final" stage of prosecution. Accordingly, the present RCE has been filed to obtain consideration of the claims in this form.

Claim 1 has been amended to specifically state that the antenna elements are arranged in a plane, and new claim 14 has been added that is directed to the embodiment of Figure 7. Applicants believe it is clear from the entirety of the description relating to the embodiments of Figures 1-6 that each of those embodiments is a planar configuration, although Applicants acknowledge that the word "planar" is not explicitly used in connection all embodiments, but is clearly used in connection with the embodiment of Figure 6 (Specification page 5, lines 20-21). Moreover, the first sentence in the last paragraph on page 2 states that the geometry of the magnetic resonance antenna can be "even." The use of the word "even" in this context was intended to describe a planar geometry. A copy of a dictionary page is attached hereto providing a definition of the word "even" as meaning "having a horizontal surface," with an alternative definition of "being on the same plane or line." Applicants submit this is ample support for this language that is now used in claim 1.

The antenna disclosed in the Srinivasan, et al. is clearly not a planar antenna but is intended to be a dome-shaped antenna in order to accommodate head examinations. The circuit drawings shown in Figures 4 and 7 of the Srinivasan, et al. reference are not intended to be physical, planar structures but are merely shown in the plane of the page as is conventional for circuit diagrams. Claim 1 and the claims depending there from, therefore, are not anticipated by the Srinivasan, et al. reference.

With regard to the bi-planar arrangement, the Examiner in the telephone interview stated that the Srinivasan, et al. reference may teach such an arrangement, with the plane defined by the connecter ring 80 forming one plane and

the plane defined by the bottom edge of the domed connecter element 84 forming a second plane. In response, the undersigned counsel stated the Srinivasan, et al. reference is extremely unclear and inconsistent as to the exact purpose and structure of the connecter element 84. Although it is shown as a dome-shaped cap in Figure 1 (without a reference numeral) and Figure 2, it is identified as a point in Figures 3 and 4, and the same function is ascribed to the point 118 in the written description accompanying Figures 6 and 7. Although the element 84 is referred to as a "common circular electrode" at column 4, line 30 of Srinivasan, et al., the purpose appears to be to define a single point which can be considered as "virtual ground" or at least a connection point to virtual ground. The importance of this virtual ground point is described in the Srinivasan, et al. reference at column 5, lines 10-21 and column 5, lines 42-52. This being the case, it is unclear in the Srinivasan, et al. reference as to exactly how the antenna elements are electrically connected to the element 84. Even if the element 84 has a dome-like shape, as indicated in Figures 1 and 2, it is not clear whether this entire dome-shaped element consists of electrically conducting material, or whether it merely serves as a mechanical guide for the individual antenna elements to proceed to a common connection location which is, in fact, a point. If the antenna elements did, in fact, connect and terminate at the lower circular edge of the dome-like cap, this would seem to contradict the importance of having a virtual ground "point" as emphasized in the cited passages of Srinivasan, et al.

In summary, therefore, it is Applicant's position that the Srinivasan, et al. reference does not provide clear and explicit teachings for a bi-planar arrangement as set forth in claim 14 herein, and that leaves many unanswered questions requiring speculation and guessing as to that particular aspect of the Srinivasan, et al. disclosure.

With regard to claim 14, however, Applicants are not relying merely on the bi-planar arrangement of the antenna element beginnings and the antenna element ends in order to support patentability. The antenna elements in claim 14 have been defined as being linear and three-dimensionally straight, as shown in Figure 7. The term "three-dimensionally straight" distinguishes those antenna elements over the elements of Srinivasan, et al. which can only be considered (when viewed from the

end as in the non-realistic view of Figure 7, as being two-dimensionally straight. Otherwise, the antenna elements in Srinivasan, et al. are curved, as indicated in the other perspective views. (The embodiment of Figure 9 in Srinivasan, et al. will be discussed separately below).

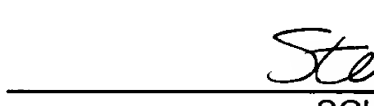
Additionally, claim 14 states that the antenna elements intersect the center axis at a common point, which is not located in either of the respective planes of the antenna beginnings and the antenna ends. This is also indicated (point 11) in Figure 7 from the present Application. Clearly, none of the embodiments disclosed in the Srinivasan, et al. reference which employ curved antenna elements satisfying any of these limitations of claim 14.

In the embodiment shown in Figure 9 of the Srinivasan, et al., Applicants submit it would not be reasonable to interpret the plane containing the points 114 and 118 as conforming to either of the element end plane or element beginning plane as set forth in claim 14. This is because, as noted above, if the antenna elements in Srinivasan, et al. can be said to terminate at any location, it must be the *point* 118, rather than a plane. The point 114 therefore is merely a corner point for an antenna element, such as antenna element 122, proceeding toward the point 118. Therefore, the antenna elements in the embodiment of Figure 9 of Srinivasan, et al. do not satisfy the aforementioned limitations of claim 14 regarding the elements being three-dimensionally straight and intersecting the center axis at a point which is not contained in either the beginning plane or the end plane.

Therefore, none of new claims 14-16 is anticipated by, nor obvious in view of, the Srinivasan, et al. reference.

All claims of the Application are therefore submitted to be in condition for allowance, and early reconsideration of the Application is respectfully requested.

Submitted by,



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